

the ground below the nest. During the afternoon the pigeon added the odd stick. The following day it appeared to have deserted the nest.

On 8 January the pigeon was back on the nest and was adding the odd stick. This activity continued until the 18th when increased urgency began again with the pigeon active to and from the nest.

The following day the pigeon was covering the nest most of the time, but there was no egg when the nest was checked in the evening.

On 20 January the bird was sitting tightly all day. Although several visits were made to the nest, the bird was always present and it was not possible to confirm that the egg was present. The behaviour indicated that it was most probably present. The following morning it was definitely present and incubation was proceeding.

On 22 January the nest was tilted at a very dangerous angle and the egg was ready to fall out. I made the nest safe by fixing some old wire-netting under it. Unfortunately I left the island on 26 January and was not able to follow the nest to completion. When the nest was inspected about two months later, however, it appeared to have been successful.

As the pigeon takes some 28 days to hatch and a further 45 days to leave the nest (Oliver 1955, *New Zealand birds*, A. H. & A. W. Reed), it is unlikely that two broods would be raised in a season. However the above observation shows that relaying can occur some 14 days after an egg is lost early in incubation.

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#### AN OBSERVATION OF AGGRESSION AMONG N.I. KOKAKO IN PUKETI FOREST

During a wildlife survey of Puketi Forest, Northland, in November 1979 four North Island Kokako (*Callaeas cinerea wilsoni*) were attracted to a taped recording of local dialect. One pair of Kokako, which had been singing about 100 metres away, responded to the Kokako tape by quickly moving through the forest canopy to the source of the "new song." After observing this pair for about a minute in the upper understorey on this ridge site, I again played the tape. A third bird replied from an adjacent valley to the north and within a minute had joined the pair above me. All three birds were seen to perch close together. Although the dense upper understorey and canopy — predominantly kauri (*Agathis australis*) and tanekaha (*Phyllocladus trichomanoides*) at the site — made observation difficult, contactual behaviour was apparent. The birds were quietly mewing and chirring.

The tape was played for a third time and a fourth Kokako replied from the area to the north from where the third bird had

come. Shortly afterwards this last bird arrived on the ridge. All birds moved about quite quickly in the upper understorey and canopy for about 30 seconds. A fight then broke out between two birds. One gave a distress call, and with much flapping, both birds fell some 10 metres to the ground locked in combat. Bills, feet and wings all seemed to be used although one seemed to use its wings to slow both birds' descent to the ground (fairly ineffectively). Although they landed barely two metres from where I stood, both birds seemed not to notice me and continued fighting on the ground for 5 seconds before parting and leaping up through the understorey. The northern pair then moved off down the side of the ridge towards the north while the other pair remained, both birds singing.

The ridge used as my observation point may also have been a territory boundary for the two pairs. The threshold for aggression in one or both of the combattants may have been lowered because of the onset of breeding. It is also possible that the use of the Kokako tape may have elicited abnormal behaviour in the birds.

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#### HONEYEATERS FEEDING ON *PSEUDOWINTERA* — A NEW RECORD

On 30 May 1979, in the Akatarawas, at the southern end of the Tararua Forest Park, Bellbirds (*Anthornis melanura*) and Tuis (*Prothemadera novaeseelandiae*) were observed feeding simultaneously on the ripe fruits of the lowland horopito (*Pseudowintera axillaris*). No records are in the literature of honeyeaters or other birds feeding on *P. axillaris* fruit, but McEwen (1978) reported that New Zealand Pigeons feed on the fruit of *P. colorata* (McEwen, 1978). The food of the New Zealand pigeon (*Hemiphaga novaeseelandiae novaeseelandiae*). NZ Jour. Ecol. 1: 99-108). From 1030-1230 on a fine day the two honeyeaters intermingled in the canopy of a hinau-kamahi-rimu forest (*Elaeocarpus dentatus*-*Weinmannia racemosa*-*Dacrydium cupressinum*; c. 550 m). Mature birds of both species were observed to alight on the branches of horopito, an understorey tree, and to consume its fleshy orange-red pea-sized berries. The bellbirds fed rapidly, e.g. one mature bird of undetermined sex ate six fruits in a 10-second period. The bellbirds generally fed on berries from the same branch, often a thin upper one, on which they were perched. An adult male tui perched on a more robust lower branch (c. 1.5 m off the ground) and reached for fruit on nearby branches. The tui consumed 12 berries over a two-minute period.

The only other edible fruits present were those of stinkwood (*Coprosma foetidissima*) which are also small, orange-red and fleshy.